



inps journal

Indiana Native Plant Society

Spring 2024

Indiana Dedicates 300th Nature Preserve

By John A. Bacone

A major conservation milestone was reached this past October – the dedication of Toothwort Woods as Indiana's 300th nature preserve.

Toothwort Woods is located within Crosley Fish and Wildlife Area, in Jennings County. The new nature preserve contains all four of the toothwort species known to Indiana, within a scenic forested ravine complex along the Vernon Fork of the Muscatatuck River. High quality

examples of the Bluegrass mesic and dry-mesic upland forest natural communities comprise most of the nature preserve.

When the Nature Preserves Act was passed by the Legislature in 1967, the Division of Nature Preserves (DNP) was established within the Indiana Department of Natural Resources. From its first days, DNP worked with The Nature Conservancy (TNC) and ACRES Land Trust (the only land trusts in Indiana at the time) and conservationists and academics to find Indiana's remaining natural areas, and then to protect and manage them. The book *Natural Areas in Indiana and Their Preservation* (Lindsey et al. 1969) was the starting point for these efforts. Pine Hills was the first nature preserve to be dedicated. It protects relict populations of eastern hemlock (*Tsuga canadensis*), white pine (*Pinus strobus*), and American yew (*Taxus canadensis*), and has four backbones, a geologic feature also known as incised meanders.

Courtesy IDNR



Pine Hills was dedicated as Indiana's first state nature preserve in 1968. It also received recognition as a National Natural Landmark. Principals at the dedication of the National Landmark were John Hillenbrand (chair of the Indiana Natural Resources Commission), Jack McCormick (Naturalist at Shades State Park), and Tom Dustin (Conservation Chair of the Izaak Walton League and President of ACRES Land Trust).

Over the 55 plus years since the Nature Preserves Act was passed, DNP has worked with many partners to find Indiana's remaining natural areas, conducting county-by-county inventories. Indiana's nature preserves are owned by 50 different entities. These owners include five Divisions within the Department of Natural Resources, five colleges and universities, 26 city/county park boards, 12 land trusts, and two community foundations.

Inside

Book Review	5
Conservation	1, 16
Florathon	15
INPS in Action	9, 13
Native Plant Profile	4, 10
Native Plants and Me	12
Natural Area Profile	1, 3
Naturalist Profile	6

The fact that there are 300 nature preserves encompassing over 55,000 acres is significant on its own. However, the real conservation significance is what has been protected within the nature preserve system. The goal of the Division of Nature Preserves has been to have at least one example of each of Indiana's natural communities protected within a nature preserve. Indiana has 92 natural communities. These include a variety of forests, prairies, wetlands, and barrens as well as glades, cliffs, and caves. To date, 91 of Indiana's natural communities are included within the nature preserve system. An example of the remaining unprotected natural community, sinkhole swamp and pond, was recently acquired by the Sam Shine Foundation, and will soon be dedicated as a nature preserve.

300 — continued on page 2

300 — continued from front page

Indiana's rarest flora and fauna have been a target for inclusion in the nature preserve system. According to the Natural Heritage Database, housed within the Division of Nature Preserves, there are 251 plant species classified as endangered (five or fewer occurrences) in Indiana. Of these, 194 occur within a nature preserve. Indiana has 184 plants considered threatened or of special concern (20 or fewer occurrences), and of these, 166 occur within a dedicated nature preserve. There are similar statistics for Indiana's rarest vertebrate species. For example, 12 of 15 endangered reptiles and four of six endangered amphibians find habitat within a dedicated nature preserve.



John Maxwell

The October 2023 dedication of Toothwort Woods Nature Preserve, the 300th in the state nature preserve system, included familiar INPS members in addition to current and retired members of IDNR's Division of Nature Preserves.

A number of large nature preserves, over 1000 acres in size, afford visitors a chance to see large pre-settlement landscapes. The Ten O'clock Line Nature Preserve in Brown County State Park (Indiana's largest nature preserve) protects 3,339 acres of the Brown County Hills. Rocky Hollow-Falls Canyon Nature Preserve at Turkey Run State Park encompasses over 1600 acres, and contains sandstone canyons, waterfalls, and upland and floodplain forests along Sugar Creek. Dunes Nature Preserve, within Indiana Dunes State Park along Lake Michigan, contains massive dunes, extensive beaches and foredunes, and swamps and marshes. Sherman Minton Nature Preserve, in Floyd County, contains large areas of Indiana's "Knobs" that harbor siltstone glades and populations of Virginia pine (*Pinus virginiana*). Big Walnut Nature Preserve contains large forested

complexes along Big Walnut Creek, just 45 miles west of Indianapolis. Large prairie and wetland complexes in Newton County, including TNC's expansive Kankakee Sands restoration, provide an excellent opportunity to see the prairie country in northwest Indiana. The Limberlost/Loblolly Nature Preserves in Jay and Adams counties include large scale wetland restorations, bringing back the landscape Gene Stratton Porter wrote about in her famous novels.

Perhaps due to the amount of wetland loss in Indiana's history, preserves protecting the numerous types of wetlands are among my favorites. Cypress swamps, which once covered tens of thousands of acres, have been protected in Posey County. In northern Indiana, wetland complexes containing marshes and shrub- and forested-swamps have been protected around large and small lakes. These include Lake Manitou (Fulton County), Olin Lake (LaGrange County), Big and Little Chapman Lakes (Kosciusko County), Spicer Lake (St. Joseph County) and Koontz and Round Lakes (Starke County). Some of Indiana's rarest wetland types, seeps, springs, fens, bogs, and coastal plain ponds, can also be found within nature preserves.

Many of the 300 nature preserves are open to the public. Folks interested in visiting them are encouraged to visit the Division of Nature Preserves website (www.in.gov/dnr/nature-preserves/) to learn about access and other regulations. Some preserves are not yet open due to inadequate parking or access. Some are not open due to ecological fragility. Some areas are open to hunting, so safety precautions are a must. In all cases, it should be noted that the acquisition and protection of these areas was just the beginning of the story. All natural areas require some type of management. Invasive species, encroachments, climate change, and the need for prescribed fire need to be addressed. While these areas have been protected "in perpetuity," the need for constant stewardship must also continue in perpetuity. As Rachel Carson observed "Conservation is a cause that has no end. There is no point at which we can say our work is finished." We all owe our thanks to the many organizations and to their staff, who work to keep Indiana's natural diversity intact for future generations.

— continued at right

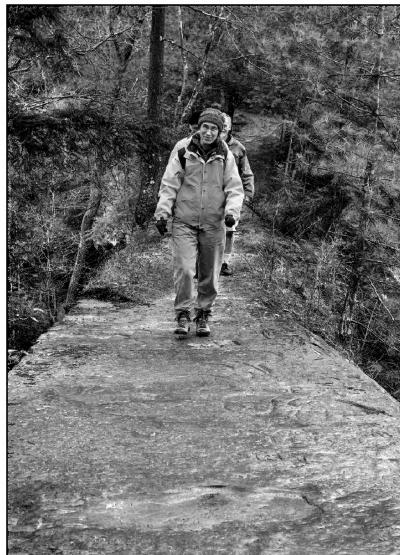
The 2008 Pine Hills Field Trip

In 2008, INPS mounted a field trip to Pine Hills Nature Preserve led by Roger Hedge, then the ecologist with the Indiana Department of Natural Resources Division of Nature Preserves. Although the outing took place in mid-spring, it was a cold, wet day. The attendees were suitably dressed and all "survived" thanks to Roger's able leadership. These several photos demonstrate why the area was an outstanding candidate as Indiana's first state nature preserve.

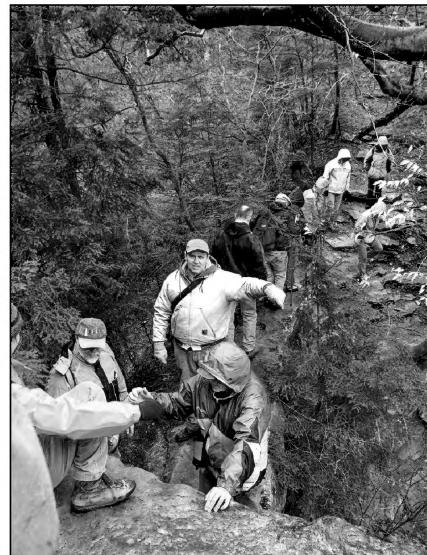
All photos by Paul Rothrock



Roger, while kneeling on the ledge known as Turkey Backbone, pointed out the uncommon native conifers. This location harbored seedlings of eastern hemlock (*Tsuga canadensis*) and a backdrop of white pine (*Pinus strobus*).



Mary Damm, framed by white pine, scoots across Devil's Backbone. This 6 foot wide ledge reaches up to 100 feet above the adjacent streams, Clifty Creek and Indian Creek.



Roger directed the treacherous descent off Devil's Backbone. Here one can spot eastern hemlock. Canada yew (*Taxus canadensis*) also grows nearby. Given the cliffs and steep slopes, when you visit the nature preserve, please be scrupulous about staying on trails. This prevents unnecessary erosion of sensitive habitat and endangerment of uncommon plant species.



— continued from left

Reference

Lindsay, A.A., D.V. Schmelz & S.A. Nichols. 1969. Natural Areas in Indiana and Their Preservation. Indiana Natural Areas Survey, Department of Biological Sciences, Purdue University, Lafayette, IN.

John Bacone, a member of the Central Chapter of INPS, is the retired Director of the Division of Nature Preserves. When he joined DNP in 1978 there were 46 nature preserves in the system.

— Save the Date! —

INPS Annual Conference

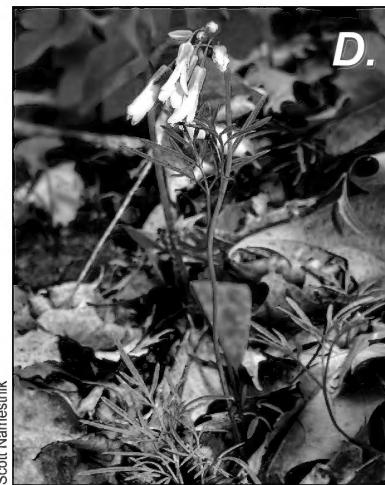
Saturday, October 26th, 2024
The Forum Events Center,
Fishers

Toothwort Species in Indiana

Indiana's 300th State Nature Preserve has the distinction of protecting all four species of toothwort within its boundaries. Can you recognize each of these spring ephemeral species?

1. Slender toothwort (*Cardamine angustata*) has stem leaves that are distinctly narrower than those from the rhizome.
2. Cut-leaf toothwort (*C. concatenata*) has whorls of three leaves on its stem that have coarsely toothed margins.
3. Two-leaved toothwort (*C. diphylla*) has two, broad stem leaves.
4. Fork-leaf toothwort (*C. dissecta*) has stem-leaves with 3-7 long, linear segments.

How many toothworts can you identify?
Find the answers on page 15!



Classic Book Review: Reading the Landscape

by May Theilgaard Watts

Reviewed by Nick Harby

Required reading for the Hoosier naturalist is May Theilgaard Watts' 1957 classic, *Reading the Landscape: An Adventure in Ecology*. If you're already familiar with this book, it's a good time to read it again. Watts was a student of the pioneer ecologist Henry Cowles at the University of Chicago. There is vivid description of the Indiana Dunes and Cowles Bog – How one student on a field trip unfortunately failed to recognize poison sumac and cut himself a walking stick, with the results we might expect. Or how another student lost her shoes in the muck jumping up and down on the floating mat of bog vegetation. In concise and skillful language, Watts gives us a discussion of plant succession in these wetlands, complete with naming the many species of plants to be found in their proper places.

A favorite passage starts on page 69:

"The carnivorous plants were long an enigma. It has taken the work of a succession of famous botanists to arrive at our present understanding of the ways of these plants, and of their presence in a bog. If we were to look at the pitcher plant and sundew, as early botanists looked at them, through a gradually clearing fog of mystery, to witness the unfolding of what Emily Dickinson called "truth's superb surprise," we would see a succession of [fascinating] observations and experiments"

She continues with a well-drawn history of the varying viewpoints that reigned for a century. I leave it to you, dear reader, to continue with this passage as you pick up a copy of *Reading the Landscape*. In the meantime here are several chapter summaries, my favorite highlights:

Chapter 2 – *Prairie Plowing Match* reviews several historical accounts of the vast prairie lands that are now almost completely gone.

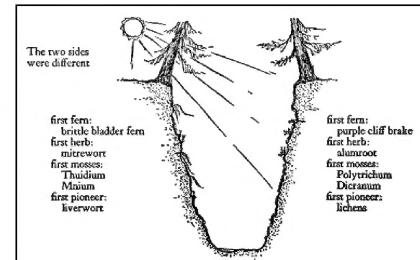
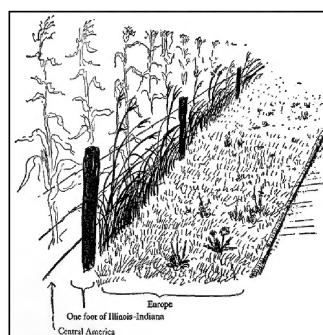
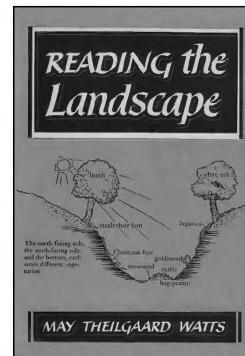
Chapter 5 – *Canyon Story* follows a hike along a stream at Turkey Run, from high level ground, as it descends to Sugar Creek. Mentioned here are reports of researchers from Butler University describing changes in the soil as the stream deepens into a canyon, and how the herbaceous layer changes from acid-tolerant plants (cushion moss, reindeer lichen, pine-tree moss, partridgeberry) to plants

that are not typically acid-tolerant (downy yellow violet, ginseng, jewelweed, wild phlox).

Chapter 8 – *The Sand Dunes of Indiana* reveals why sea rocket and marram grass and jack pine and cactus exist where they do and how blowouts reveal bones of mammals who lived hundreds of years ago. These bones include fisher, elk, and bear, now long gone from the dunes.

This book can be hard to find in libraries given the unfortunate and recent habit of public libraries to clear their shelves of old books. A search reveals a copy at the Indiana State Library and the West Lafayette Public Library. It is not in the Indianapolis Public Library, the Carmel Public Library, the Monroe County Public Library, nor the Tippecanoe County Public Library.

I was surprised that it was not in the IU Libraries nor the Purdue libraries. Did you think



A.T. Watts

Watts' verbal trek through Turkey Run canyon reveals many subtle variations in herbaceous vegetation due to the wide range of microclimates and soil-types within the ravine.

that universities are bastions of knowledge? Not when it comes to natural history.

If you want to buy a copy, you can find some available on online websites.

If you are in the Lafayette area, the NICHES Land Trust Library at Clegg Garden has four copies of *Reading the Landscape* which are available for you to check out. Pair your library visit with a tour of the beautiful 17 acre property.

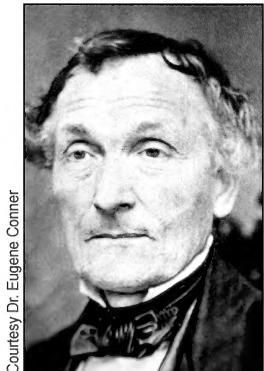
If you are a lover of Indiana natural history, I guarantee this volume is worth seeking out..

Nick Harby is a member of the West Central Chapter of INPS and an occasional contributor of reviews about nature artists and authors.

Indiana's First Resident Botanist:

By Michael Homoya

The only known photograph of Dr. Asahel Clapp (1792-1862).



Courtesy Dr. Eugene Conner



midwestherbaria.org

One of Dr. Clapp's specimens of large-stipuled psoralea, a now extinct Midwestern endemic: this one is housed at The Academy of Natural Sciences in Philadelphia.

Guided by the narrow beam of light from a small flashlight, we slowly stepped up the final creaky stairs to the attic. In this old, mostly boarded-up building on New Albany's Main Street, Dr. Eugene Conner, Rich Fields, Kevin Thomas, and I were looking for treasure. Our hope was that, like the dusty walnuts cached away under the attic floor by some squirrel of long ago, forgotten items of the building's earliest human resident would still be present. The building was constructed by Nathaniel Scribner when New Albany was but a fledgling Ohio River town. From 1822 until 1862, it was the home and medical office of Dr. Asahel Clapp. Dr. Clapp, born in 1792 in Hubbardston, Massachusetts, moved to New Albany in 1817. At the tender age of

25, he became the town's first physician. He was to become much more than a small-town doctor, however. Dr. Clapp was highly regarded by his peers in the medical profession. In 1820, he was elected the first president of the original Indiana Medical Society. In 1850, he became chairman of the American Medical Association Committee on Indigenous Medical Botany and *Materia Medica*.

A variety of historical and medical journals have discussed Dr. Clapp's medical talents. Few, however, relate the accomplishments of Dr. Clapp the botanist. His contributions to the study of Indiana plant life are more significant than his medical

contributions, at least from a historical perspective. For his work, Dr. Clapp deserves the title of Indiana's first resident botanist.

I first recognized the significance of Dr. Clapp's plant studies while reading certain entries in Charles Deam's *Flora of Indiana*. Many of these entries are about rare and unusual plants collected in the New Albany area by Clapp in the early to mid-1800s. Dr.

Clapp collected hundreds of plants, all of them of interest. But without question, his most celebrated find is the large-stipuled psoralea (a kind of scurf-pea with the scientific name *Orbexilum stipulatum*). His earliest collection of this plant was in 1835. At that time, the plant had not been described and was not known to anyone in science. Apparently he collected the plant from a rock promontory, known as Rock Island, in the Falls of the Ohio. We assume this because all other known collections of this plant, both by Dr. Clapp and other botanists, came from this area. Such a restricted range for a plant is remarkable, especially in the Midwest. Most Midwestern plants tend to be wide-ranging. Equally remarkable – although not surprising because Rock Island was destroyed in a lock and dam project – is the fact that the plant is extinct. Evidently it was last collected in 1881, and has not been seen since. I am aware of only one other Midwestern flowering plant that suffered the same fate as the large-stipuled psoralea.

Although Dr. Clapp's collection of rare species is significant, his extensive collection as well as notes of species around New Albany are at least as important. They provide a window to the past. The two areas where this applies most are the "Knobs" of Floyd and Clark counties and the "Barrens" of Harrison and Washington counties. His collections were made before large-scale development and alteration of the landscape. Therefore, they give us a reasonably accurate idea of the natural vegetation of those areas. This knowledge has been invaluable to the Department of Natural Resources' Division of Nature Preserves in its attempt to identify and protect examples of Indiana's natural landscape.

What Dr. Clapp found in the Knobs is not very different from what is present there today. With a few exceptions, much of the Knobs consists of the same forested, rocky slopes that were present in the early 1800s. The exceptions include the general absence of the American chestnut (*Castanea dentata*) and the presence of scattered development. The Barrens region is another matter. The

The Contributions of Dr. Asahel Clapp

Barrens was an extensive natural grassland that occurred on the sinkhole plain in Harrison and Washington counties. Much like a prairie or meadow, the Barrens was adorned with a myriad of grasses and showy wildflowers. It was so beautiful that Dr. Clapp, in an 1836 letter to Dr. John Torrey of New York, wrote: "They are by far the finest field for a botanist that I ever beheld. A much greater number of species are found in the same place than I have observed in any other place. It is indeed like a botanic garden but much more interesting." Unfortunately, the grandeur of the Barrens is no more. Except for a few precious acres, including some in the Flint Barrens Nature Preserve, the Barrens has been developed or converted to agricultural use.

Historical records demonstrate that Dr. Clapp was an active scientist in several fields (Inlow 1960). As a result, he corresponded with the most eminent of his time. He was even visited by the famed British geologist Sir Charles Lyell in 1846 who wanted to be shown the wonders of the ancient coral reef visible at the Falls of the Ohio. As scientific knowledge advanced, Dr. Clapp amended his notebooks with footnotes and marginal corrections. His most notable botanical work was a systematic catalog, running to 222 pages, of the medicinal plants of the United States. As a demonstration of his industry of study, Dr. Clapp writes in his catalog: "Within the last twenty years, I have collected and determined in this locality [New Albany] upwards of nine hundred species of flowering and filicoid plants, of which three hundred and thirteen have reputed medicinal properties, and are included in this synopsis." (Popp 2024).

Dr. Clapp died in New Albany on December 17, 1862, but he lives today through his books, writings, and plant collections. We had hoped that our search

of his attic might enhance our knowledge of Dr. Clapp's life and work, but it was not to be. His belongings, it seems, have been widely scattered. Disappointed, but not discouraged, we left the building with greater conviction to continue our quest for items related to Dr. Clapp's work. Even if nothing else is found, we are grateful for what we have. Hoosiers should be proud that such a sterling individual as Dr. Asahel Clapp resided in our state.

Reference

Inlow, W.D. 1960. The Indiana physician as geologist and naturalist. Indiana Magazine of History 61:1-35.
Popp, M. 2024. Dr. Asahel Clapp – New Albany Indiana Paleontologist. <https://louisvillefossils.blogspot.com/2023/08> (accessed on 5 January 2024).

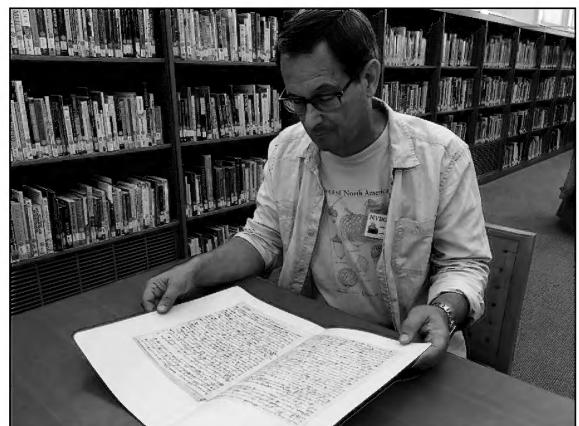
Michael Homoya, our Indiana State Botanist from 1982 to 2019, originally wrote this article for a 2009 issue of the Outdoor Indiana magazine. He is a past-president of INPS and a member of the Central Chapter.

Below left:

Mike Homoya reading an Asahel Clapp letter to the famous 19th century botanist John Torrey, preserved at the New York Botanical Garden archive.

Below right:

An example of Dr. Clapp's thoroughness: a handwritten listing of plants that he had observed in Kentucky but not on the north side of the Ohio River.



2997934 A list of plants growing in Kentucky and within 20 miles of New Albany not found in the vicinity ~~as in~~ Indiana
Aceratia virideflora (W.L.)
Alopecurus geniculatus (Griseb.)
Amelanchier alnifolia (O. S.)
Aristida gracilis (Griseb.)
Amaranthus avinaccum (Griseb.)
Asclepias Voraginea (O. V.)
Barbara Vulgaris (Wm. Gray)
Boltonia glabratilis (W.L.)
Calystegia sepium (Griseb.)
Ceratina lativittata (Wm. L.)
Coreus ruberius? (O. V.)
Ceratostachys cinnamomea (Griseb.)
Cyperus ovalis (Griseb.)
Cirsium diphyllum (O. V.)
Decodon verticillatum (W.L.)
Glycine peltata (Griseb.)
Hottonia inflata (O. V.)
Lemna minor, lemprosum (Griseb.)
Molinia Virginica (Griseb.)
Montia canula (W.L.)

Indiana University Collections Library

@indiananativeplants.org



Mission

To promote the appreciation, preservation, scientific study, and use of plants native to Indiana.

To teach people about their beauty, diversity, and importance to our environment.

Board of Directors

President	Coralie Palmer
Vice President	George Manning
Secretary	Ellen Jacquot
Treasurer	Sally Routh
Director	Catia Canteiro
Director	Alicia Douglass
Director	Will Drews
Director	Roger Hedge
Director	Tom Hohman
Director	Ruth Ann Ingraham
Director	Mary Welz

president@indiananativeplants.org
muskingumensis@gmail.com
secretary@indiananativeplants.org
treasurer@indiananativeplants.org
ccanteiro@indyzoo.com
alicia.bever@gmail.com
wapdraws@gmail.com
rogerhedge@gmail.com
hohmantr@aol.com
rai38@sbcglobal.net
marybwelz@gmail.com

Supporting Roles

Donor Relations	Open
Historian	Ruth Ann Ingraham
Materials Distribution	Laura Sertic
Membership	Wendy Ford
Website/Communications	Wendy Ford

donors@indiananativeplants.org
historian@indiananativeplants.org
materials@indiananativeplants.org
membership@indiananativeplants.org
webmaster@indiananativeplants.org

State Program Leaders

Annual Conference 2024	Jo Lock & Greg Shaner
Biodiversity Grants	Molly Baughman
Book Sale	Suzanne Stevens
Conservation Advocacy	Brenten Reust
Diversity	Brooke Alford
Florathon	Barbara Homoya
Grow Indiana Natives	Heidi Gray
IN Native Seed Communities	Bill Daniels
INPS Journal	Scott Namestnik
Journal Editor	Paul Rothrock
Journal Layout	Sam Ransdell
Journal Distribution Assistant	Amanda Woods
Invasive Plant Education	Dawn Slack & Liz Yetter
Landscaping with Natives	Coralie Palmer
Letha's Youth Fund	Nicole Messacar
Native Plant Wizard Patch	Nicole Messacar
Photo Contest	Greg Shaner
Plant Sale & Auction	Aimee Cooper
Student Member	Ethan Iversen
Student Member	Sarah Downing
Youth Education	Nicole Messacar

conference@indiananativeplants.org
grants@indiananativeplants.org
booksale@indiananativeplants.org
conservation@indiananativeplants.org
diversity@indiananativeplants.org
florathon@indiananativeplants.org
grow@indiananativeplants.org
seed@indiananativeplants.org
journal@indiananativeplants.org
journal@indiananativeplants.org
journal@indiananativeplants.org
journal@indiananativeplants.org
invasives@indiananativeplants.org
landscape@indiananativeplants.org
lethasfund@indiananativeplants.org
wizard@indiananativeplants.org
photo@indiananativeplants.org
auction@indiananativeplants.org
iversenethan@gmail.com
sdowning1@mariann.edu
youth@indiananativeplants.org

Chapter Leaders

Central	Greg Monzel
East Central	Jon Creek
North	Open
Northeast	Sean Nolan
South Central	Kris Ligman
Southwest	Megan Ritterskamp
West Central	George Kopcha

central@indiananativeplants.org
eastcentral@indiananativeplants.org
north@indiananativeplants.org
northeast@indiananativeplants.org
southcentral@indiananativeplants.org
southwest@indiananativeplants.org
westcentral@indiananativeplants.org

©2024

INPS JOURNAL is published quarterly for members of the Indiana Native Plant Society. Material may be reprinted with permission of the editors. Past issues of *INPS Journal* can be found at www.biodiversitylibrary.org.

Submissions: Anyone may submit articles, photos and news items. Acceptance is at the discretion of the editors. Submit text and photos (300 ppi) via email to journal@indiananativeplants.org. Query for writer's guidelines. Deadlines: Jan. 1 issue – Oct 22; April 1 issue – Jan. 22; July 1 issue – April 22; Oct. 1 issue – July 22.

Membership: INPS is a not-for-profit 501(c)(3) organization open to the public. Join at www.indiananativeplants.org.
Share online: Send information for posting to webmaster@indiananativeplants.org.

2024 Native Plant Photo Contest

By Greg Shaner

Our INPS membership and Facebook group boast many fine nature photographers, and we always need good photos to promote the Indiana Native Plant Society on the website, in brochures, in talks, and on social media.

The annual photo contest offers an opportunity to showcase the talents of local photographers and to build a collection of excellent images that support the education and outreach efforts of INPS.

The 2024 contest is open to the public, ages 11 and above, for prizes in the Plant Portrait category and Wetland Plants category. We include the Plant Portrait category every year, but the second category changes each year to provide new challenges for photographers. The deadline for 2024 submissions is August 31.

2024 Contest Rules

Categories: Winners will be chosen in two categories – Native Plant Portrait and Wetland Plants.

Members of the INPS Board and Council are ineligible for prizes but are welcome to submit photos for the good of the cause.

Submissions: You may enter photos in either category or both. An individual may submit up to three photos in each category. Submit each photo on a separate entry form. Images should be at least 300 pixels per inch so that they can be reproduced in print media. Submit photos at <https://indiananativeplants.org/inps-sponsored-events/photo-contest/>.

Deadline for Submission: Entries with file uploads must be submitted by August 31, 2024.

Permission and Photo Credits: By entering this contest, entrants agree to allow their photos to be used on the INPS website, in printed materials, in educational programs, and for other INPS purposes. The name of the photographer will be acknowledged with each use, and photographers will retain full rights to their images.

Native Plant Portrait Category: Photos must be of Indiana native plants only and may show leaves, flowers, or fruits of herbaceous or woody plants, including ferns. These may be “full plant” shots showing full form and stature, or close-ups of an inflorescence or single flower. Photos may be taken in either a natural setting or within a landscaped setting, providing they show Indiana native plants. The identity of the plant should be discernible from the photograph – thus no extreme close-ups or shots from so far away the plant cannot be identified. Both a Latin name and a common name of the plant should accompany the photograph.



Tim Street

*This portrait of bloodroot (*Sanguinaria canadensis*) was a first prize winner in the first INPS Photo Contest in 2019.*

Wetland Plants Category: This new category is intended to encourage submission of photos of native plants in Indiana wetlands. Photos may depict an entire plant or some part of the plant, preferably that shows characters useful for species identification. They may also be landscape photos that depict a wetland. As with the Plant Portrait category, photos should be accompanied by both the Latin name and common name of the species, or in the case of landscape photos, the names of the predominant species.

Prizes, Prizes

Contest entries will be judged by Greg Shaner and a team of INPS members, with attention to adherence to the category theme, composition, clarity, creativity, and aesthetic appeal.

First, second, and third place winners will be selected in each category, with cash prizes of \$75, \$50, and \$25.

Greg Shaner, chair of the Photo Contest Committee, is a member of the West Central Chapter and also serves as INPS Secretary.

Ohio Buckeye (*Aesculus glabra*):

The leaves of Ohio buckeye unfurl early in spring to take advantage of the absence of shade from surrounding canopy trees.

By Paul Rothrock

One might expect that the choice of state tree would echo the character of its citizens. After all, Indiana has chosen the tulip poplar (*Liriodendron tulipifera*), a species known for its tall, straight stature, valuable timber,

beautiful flowers, and fruit that supports a diversity of wildlife. It fits the character of Hoosiers. Then there is the Ohio or stinky buckeye (*Aesculus glabra*), a medium-size tree shunned by the forest industry, whose bruised twigs emit a fetid odor, and whose nuts are inedible since they are laced with toxins. What does it say about the citizens of our neighbor to the east?

At first glance *Aesculus glabra* does not seem an appropriate representative of a fellow state. But let's take a closer look at the species and see whether we can uncover attributes to recommend it. Ohio buckeye is indeed a trove of defensive chemicals

that perhaps simply represent an inadequately explored pharmacy. Cherokee people pounded the seeds to make poultices for soothing aches and pains. Native Americans purportedly would introduce plant bits into a quiet stream in order to stupefy the

fish, making them easy to harvest. Modern chemical analyses have isolated several dozen saponins, known as aesculiosides, from seeds (Yuan et al. 2012). These have an impact on the central nervous system of mammals. The cell toxicity has seen some experimentation with cancer cells. And the genus *Aesculus* as a whole manufactures several hundred different compounds that could have medicinal potential.

Although the timber industry avoids buckeye, pioneers did find it a useful wood in building cabins and furniture. The wood is light, easily worked, and resists splitting.

In forests Ohio buckeye most often remains as an understory tree (seldom reaching more than 30 feet tall) and does not become dominant in the canopy. The species favors the formerly glaciated regions of Indiana that have soils derived from limestone. In the southern part of the state, beyond the limits of glaciation, it thrives in outwash deposits and ravines in regions with limestone bedrock. Not surprising then that Ohio buckeye is rare in the northwest part of Indiana and in the Wabash lowlands that lack these soil characteristics. However, in many parts of Indiana this tree may find favor in your landscape design.

What I find most fascinating about Ohio buckeye is its springtime phenology, i.e., the timing of bud break and leaf development. Since the species often grows beneath the canopy of other tree species, its distinct, palmately compound leaves expand early. Sometimes with our increasingly unpredictable springtime temperatures they even get nipped by a late frost. Nonetheless, this shade avoidance behavior is crucial for buckeye survival, giving it approximately three weeks of high photosynthetic activity before finding itself in the shade of neighboring trees (Augspurger et al. 2005). Often the majority of its annual photosynthetic activity is concentrated in this optimal early spring period. In turn, the shade from these understory buckeyes has an impact on the ground vegetation surrounding it, differentially reducing the cover and number of species of annuals and summer herbs (Hicks & Taylor 2015).

Paul Rothrock



The pale yellow buckeye flowers often are strongly marked by red-splotches that can serve as nectar guides for a variety of bee species.

the Unlikely Ohio State Tree

By late spring the lovely spikelike inflorescences appear. While to my eye they are not as eye-catching as the Indiana state tree, tulip poplar, they are closer to ground-level where they are easier to see, plus they possess a more complicated reproductive strategy. The lower flowers in the inflorescence are bisexual while the upper ones are male. This condition is technically known as polygamy-monoecious. The pollen from male flowers is comparatively easy for the parent tree to produce and may ensure that its genes get spread through the population. All the flowers, whether bisexual or male, are a pale yellow and attract a variety of bees. The resulting spiny fruits contain one to several brown seeds that have a pale spot giving them their eye-like aspect. By the way, if you follow superstitions, you might want to carry several buckeyes in your pocket to ward off rheumatism.

It should be noted that the *Aesculus* genus has additional species native to the Midwest. The yellow buckeye (*A. flava*) is infrequent on wooded slopes of Indiana near the Ohio River. Unlike Ohio buckeye, this species does produce edible nuts. Red buckeye (*A. pavia*), the third Midwestern species, is rather widespread in the southern US with populations reaching into southern Illinois.

In balance, maybe the Ohio buckeye was not as good a choice as tulip poplar as a representative of a state and its flora, but I guess it could have been worse. And after all, at least Ohioans did not choose a non-native species (the peony (*Paeonia* sp.) hails from China) as their state flower. [Oops, in 1904 Ohio chose the carnation, *Dianthus caryophyllus* (a native to the Mediterranean region) as their state flower. Notably, though, they corrected the situation by selecting a state wildflower in 1986.]

References

Augspurger, C.K., J.M. Cheeseman & C.F. Salk. 2005. Light gain and physiological capacity of understorey woody plants during phenological avoidance of canopy shade. *Functional Ecology* 19:537-546.
Hicks, D.J. & M.S. Taylor 2015. Effects of *Aesculus glabra* on understory community structure and

environment in a temperate forest. *Castanea* 80:8-19.

Yuan, W., P. Wang, G. Deng & S. Li. 2012. Cytotoxic triterpenoid saponins from *Aesculus glabra* Willd. *Phytochemistry* 75:67-77.

Paul Rothrock, a member of the South Central Chapter of INPS, taught plant taxonomy at Taylor University and is the Associate Curator Emeritus of the IU Herbarium.

The lovely palmately compound leaves, curious fruits, and modest size of mature trees make buckeye a fine choice for many home landscapes.



Paul Rothrock



The flowers of red buckeye, a near-native species for Indiana, are often visited by hummingbirds. Compared to our native buckeye, they are not only red, but have a rather tubular corolla and somewhat hidden stamens.

Native Plants and Me: Infected by My Leaf Collection

By Thomas Post

I was born a city boy just outside Chicago. I grew up knowing dandelions (*Taraxacum officinale*) and playing baseball in “prairies” of bluegrass (*Poa spp.*), which were actually just vacant city lots. Lilacs (*Syringa spp.*) and rose-of-sharon (*Hibiscus syriacus*) added color to our yards while silver maple (*Acer saccharinum*) and Siberian elm (*Ulmus pumila*) provided shade along our city streets. Vacations



Frank Oliver

Tom is seen here gathering a voucher specimen of an uncommon beak-rush (*Rhynchospora macrostachya*) from a slough at Jasper-Pulaski Fish and Wildlife Area.

were spent in northern Wisconsin where I discovered a love for the outdoors. On a camping trip in junior high to Illinois Beach State Park I glimpsed and became enamored with true Illinois prairie.

As a boy I could distinguish different plants but was hard pressed to call them by name. High school biology class first opened the book that helped me realize that plants could talk, plants could tell tales, hold mysteries, and reveal history. My tutelage started with a required leaf collection of 20 different trees. Much to my chagrin one of the first trees I learned by name, the Chinese tree-of-heaven (*Ailanthus altissima*), occupied my front yard.

Heading off to college to study biology I took a class in ecology and met a classmate

named Mike Madany. On field trips I was amazed that Mike and our professor could talk the language of plants. They were able to give names to many different plants in English and Latin, as well as associate them with the plant communities where each could be found. Mike suggested I get a copy of Floyd Swink's second edition of *Plants of the Chicago Region*. I was hooked. I devoured it from cover to cover and began to hear what the plants were saying – why they grew where they did, which ones were common, which ones were rare and asking them why they grew where they did and not in other places.

Graduate school saw me attending Northeastern Illinois University where Dr. Robert Betz, noted prairie expert, was teaching. One day I collected a plant and took it to him for identification. He looked at me rather suspiciously and asked where I had collected it. After revealing that it came from a prairie remnant near my house, he proclaimed it to be a stiff gentian (*Gentianella quinquefolia*). As a result, I did my master's work at the Gensburg-Markham Prairie which was owned by the university.

While in college and grad school I landed summer jobs with the Illinois Natural Areas Inventory and the Indiana Coastal Zone Inventory. This allowed me to learn more plants from experts in field identification, as well as inventorying plants in a wide range of plant communities. Compiling information on rare plants of Indiana in the herbarium of the Field Museum in Chicago provided additional valuable experience.

After 38 years as a regional ecologist with the Division of Nature Preserves, Indiana Department of Natural Resources, I am retired. Of course as one incurably infected by that “bug” from a high school leaf collection, I still visit preserves that I worked on. I see familiar plant friends and tell the rare ones “nice to see you again old friends.”

Tom Post is a member of the West Central Chapter of INPS and lives in rural DeMotte, Indiana.

2024 INPS Plant Auction

INPS in Action: The NE Chapter's Mug Events

By Aimee Cooper

INPS's fourth annual online Plant Auction happens this May 5 to 11!

Our virtual auction has the advantage of reaching members and non-members throughout Indiana and provides fantastic offers of rare native plants, private garden tours, celebrity guided hikes, and choice natives from our invasive-free Grow Indiana Natives vendors.

The Plant Auction is only possible because of generous donations by INPS members and supporters like you! Donations for the auction support the INPS mission – “To promote the appreciation, preservation, scientific study, and use of plants native to Indiana. To teach people about their beauty, diversity, and importance to our environment.”

While the Plant Auction is an important fundraiser for the Indiana Native Plant Society, it also provides an opportunity for personal connections between fellow native plant lovers. In prior years, some successful bidders have picked up their plants from the donors, visited the donor's garden, and exchanged native plant gardening tips.

Visit the INPS auction webpage at <https://indiananativeplants.org/native-plant-auction/> for more information on participating (both donating or bidding) in this year's auction. Please send questions to auction@indiananativeplants.org.

Aimee Cooper, a member of the INPS Central Chapter, chairs the Plant Auction Committee.

By Beth Ricketts

The INPS members from northern Indiana know how to enjoy Indiana's native flora, even in the dead of winter. Eagle Marsh East in Fort Wayne is adjacent to excellent coffee. So combine the two into “Mugs on the Marsh” events! Chapter members enjoy the challenge of learning to recognize plants in the winter from their buds, fruits, and other clues. They share the enlivening experience of cold noses and toes, and then savor the day with a mug of excellent coffee at Hempton Coffee Roasters. Talk about good living!

Beth Ricketts is a member of the Northeast Chapter of INPS.

*On the December hike the group was able to explore a dried-up meander with large patches of swamp loosestrife (*Decodon verticillatus*). The water was back during the next outing in February.*



Aly Munger

Native Roots: Nature Events in West Central Indiana

Indiana Native Plant Society member Joan Mohr Samuels publishes a quarterly newsletter entitled *Native Roots*. The newsletter seeks “to promote the enjoyment and stewardship of natural areas in West Central Indiana!”

Why this newsletter? Says Joan, “If you're like me, you'd like to have all your nature news in one place – so you don't miss out on some interesting natural history programs or stewardship opportunities. That's my intent.”

The FEB-MAR 2024 issue of *Native Roots* is available on the INPS website (<https://indiananativeplants.org/wp-content/uploads/NativeRoots20241-FEB-MAR.pdf>). To have copies emailed to you, contact Joan at mohrsamuels@comcast.net. 

INPCA — continued from back page



Scott Namestnik



Above: Hill's thistle is endemic to the Great Lakes region and is a priority species for the Indiana Plant Conservation Alliance.

At right: Dr. Deb Marr presented research on the pollinator diversity and breeding system of prairie fameflower (*Phemeranthus rugospermus*) at the 2024 INPCA Annual Meeting.

Lydia Miramontes-Lloyd



of individuals and organizations, including academic institutions, for-profit businesses, not-for-profit organizations, and state and federal governments. The Indiana Native Plant Society is a valued partner of INPCA, hosting the INPCA webpage and assisting with several INPCA initiatives. Inclusiveness and collaboration drive the alliance, which is guided by a diverse group of individuals from a number of the partner organizations.

Committees led by members of the Organizational Committee actively support the initiatives of the alliance. When INPCA formed, one of these committees sought to prioritize rare species by identifying those that are both highly at-risk in Indiana and that have characteristics suggesting they would readily benefit from conservation activities. This was followed by the formation of Species Conservation Teams, which are now actively working on conservation of priority species around the state, including prairie parsley (*Polytaenia nuttallii*), Hill's thistle, Kittentails (*Besseyea bullii*), Virginia bunchflower (*Veratrum virginicum*), green star

sedge (*Carex viridistellata*), striped gentian (*Gentiana villosa*), Deam's beardtongue (*Penstemon deamii*), prairie fameflower (*Phemeranthus rugospermus*), eastern prairie white-fringed orchid (*Platanthera leucophaea*), and blue monkshood (*Aconitum uncinatum*). Conservation efforts for these species vary from conducting research and field surveys for the species to growing and installing plants in places with appropriate habitat in appropriate geographical locations. Among the current teams is the Prairie Fameflower Team. Dr. Deb Marr and Dr. Andy Schnabel from Indiana University South Bend are leading students in research on pollinators and breeding systems of the species. Another team, the Deam's Beardtongue Team, is coordinating genetics work by Dr. Michelle Marasco at Franklin College to understand the relationship between Indiana's only endemic plant species and other species in the genus *Penstemon*. These kinds of collaborative efforts between INPCA partners should lead to more effective conservation efforts in the field in the long-term.

INPCA holds an annual meeting at which partners meet in person and virtually to receive updates from INPCA species conservation teams and to learn from invited speakers about rare plant conservation topics. The 2024 meeting was sponsored and funded by two INPCA partners, Franklin College and The Nature Conservancy, and took place on January 5 at Franklin and

on Zoom. Thanks to collaboration among INPCA partners, there was no cost to attend this one-day meeting.

In just a few years, INPCA has shown that working together across disciplinary and traditional work barriers can have incredibly positive impacts, not only for our rare plants but also for the individuals and organizations working to protect them.

— continued at right

Florathon 2024

— continued from left

But we need more help ... we need you! Everyone can play an important role, whether that's assisting on an INPCA Species Conservation Team, serving on an INPCA committee, writing an article on the INPCA or a priority species, networking on behalf of INPCA, locating grant funding for INPCA projects, or creating content for the INPCA webpage. If you are interested in learning more about INPCA, visit our webpage (<https://indiananativeplants.org/indiana-plant-conservation-alliance/>), watch recordings of our past annual meetings (found on our webpage), and contact one of our committee chairs or species conservation team leaders to let us know how you would like to be involved. If your organization aligns with the INPCA mission and would like to be formally recognized as an INPCA partner, let us know and send us your organization's logo. And if you would personally like to be added to the INPCA partner email distribution list, email snamestnik@dnr.IN.gov.

We all can do a little bit to help with the conservation of rare plants in Indiana. That little bit becomes exponentially more powerful and influential when working with a diverse group that shares these same goals. We hope you will join INPCA in our mission to conserve some of Indiana's rarest plants!

Scott Namestnik is the botanist at the Indiana Natural Heritage Data Center, housed at the Indiana DNR Division of Nature Preserves. He currently serves as Coordinator for the INPCA. Scott, a member of INPS North Chapter, also serves as the INPS Journal Team Leader.

By Barb Homoya

The time has come! INPS Florathon 2024 runs from April 13 – May 31. If you have not already done so, form your team. Find one to five other plant enthusiasts to join you. Next, get your creative juices flowing and choose a team name. Then begin to plot when you will do your Florathon outing (up to 24 hours in duration) and where you will go to search for blooming wildflowers! There are multiple ways you can compete for prizes. If you desire, this also is an opportunity to collect donations to support the mission of INPS and to encourage new members to join. Additional information for this year's event can be found at <https://indiananativeplants.org/inps-sponsored-events/florathon/>. We hope to have more teams, participants, and wildflower species found during Florathon 2024. Plan now to join in the fun!

Barb Homoya, member of the Central Chapter of INPS, serves as Florathon chair. Her family members join her on the "Always Be Botanizing" Florathon team.

Answers to the toothwort quiz from page 4:

1. Slender toothwort (*Cardamine angustata*) - C
2. Cut-leaf toothwort (*C. concatenata*) - B
3. Two-leaved toothwort (*C. diphylla*) - A
4. Fork-leaf toothwort (*C. dissecta*) - D



Some of the attendees at the 2024 INPCA Annual Meeting.

Lydia Mironites-Loyd





Indiana Native Plant Society

P.O. Box 501528
Indianapolis, IN 46250-6528
Address Service Requested

Non-Profit
Organization
U.S. Postage
PAID
Indianapolis, IN
Permit No. 229

The Indiana Plant Conservation Alliance: Working Together to Conserve Indiana's Rarest Plants

By Scott Namestnik

The Indiana DNR Division of Nature Preserves includes over 400 plant species on the State's endangered and threatened species list. Many of these plants are at risk of becoming extirpated, or extinct in the wild, in Indiana. One example, Hill's thistle (*Cirsium hillii*, state endangered), was once known to have over 20 occurrences in Indiana, but today is extant at fewer than 10 locations in the state, and the remaining naturally occurring populations of this species are in decline for a variety of reasons.

Indiana's numerous conservation organizations have made localized efforts to conserve our rare plants for many years.

Some of these efforts, such as the amplification of stout goldenrod (*Solidago squarrosa*, state endangered) at the only site in Indiana where it has ever been known to occur, have been at least moderately successful. Realizing that our conservation community is much stronger and can accomplish much more when approaching challenges with a unified front, the Indiana Plant Conservation Alliance (INPCA) was formed in 2020. The mission of the INPCA is "collaborating to conserve Indiana's rare plants and their natural habitats."

Indiana is not unique in having a Plant Conservation Alliance (PCA). A number of states and regions have PCAs, and when INPCA was initially forming, other state PCAs played an important role in providing guidance and support. This support is on-going: the INPCA Coordinator participates in Southeast PCA Coordinators meetings every other month to provide updates and hear news from other states. In addition, INPCA is one of over 400 non-federal Cooperators with the national PCA (<https://www.blm.gov/programs/natural-resources/native-plant-communities/national-seed-strategy/pca>), a public-private partnership with the goal of protecting native plants by ensuring that native plant populations and their communities are maintained, enhanced, and restored.

INPCA is not a stand-alone organization, but rather an alliance

INPCA — continued on page 15

Alyssa Nyberg



In 2023, members of the Hill's Thistle Team planted plugs raised at The Nature Conservancy's Kankakee Sands nursery into a site in northwest Indiana.